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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,262	03/26/2004	Stuart Naylor	674523-2029.1	1123

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EXAMINER	
CHEN, SHIN LIN	
ART UNIT	PAPER NUMBER
1632	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/21/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/810,262	NAYLOR ET AL.	
	Examiner	Art Unit	
	Shin-Lin Chen	1632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 September 2006 and 13 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-12 and 47-54* is/are pending in the application.

4a) Of the above claim(s) *49* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-12,47,48 and 50-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9-27-06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicants' amendment filed 9-27-06 and 10-13-06 have been entered. Claims 1, 6, 14, 16 and 18 have been amended. Claims 7-11 and 19-46 have been canceled. Claims 47-54 have been added.

Newly submitted claim 49 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The SiRNA in claim 49 differ from the polynucleotide encoding an angiostatic gene product in chemical structure and biological functions. An SiRNA is a short double stranded RNA having about 21 bp and it induces the degradation of mRNA. Thus, an SiRNA is patentably distinct from the polynucleotide encoding an angiostatic gene product. They have different classifications and require separate search.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 49 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claims 1-6, 12-18 and 47-54 are pending. Claims 1-6, 12-18, 47, 48 and 50-54 are under consideration.

Information Disclosure Statement

1. The information disclosure statement filed 9-27-06 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other

information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Priority

The parent applications 09/787,562, PCT/GB99/03181, PCTGB98/02885, United Kingdom 9901906.9 and 9903538.8 fail to disclose the subject matter of the instant invention, i.e. a method for treating oculate neovascularization by delivering to the target cells in the eye of a subject a vector expressing an angiostatic gene product under the control of a promoter. Therefore, the priority dates of those parent applications are not granted. Thus, the priority of the instant invention is the filing date of the present application, 3-26-04.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim1-6, 12-18, 47, 48 and 50-54 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants' amendment filed 9-27-06 necessitates this new ground of rejection.

The term "EIAV" in line 3 of claim 1 is vague and renders the claim indefinite. The term "EIAV" is an abbreviation that can stand for various meanings. It is unclear what meaning is intended in the claims. Spelling out the term "EIAV" would be remedial. Claims 2-6, 12-18, 47, 48 and 50-54 depend from claim 1.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-6, 12-18 remain rejected and the newly added claims 47, 48 and 50-54 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for inhibiting retinal or choroidal neovascularization by direct injection of a viral vector expressing pigment epithelium-derived factor (PEDF), angiostatin, or VEGF/flt-1 receptor to target eye cells as discussed in the references cited under 35 U.S.C. 102 and 103 rejections in previous Official action, does not reasonably provide enablement for a method of treating ocular neovascularization by delivering to the target cells in the eye of a subject an EIAV-based lentiviral vector expressing any angiostatic gene product under the control of any promoter via direct injection to target cells. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims and is repeated for the reasons set froth in the preceding official action mailed 6-27-06. Applicant's arguments filed 9-27-06 and 10-13-06 have been fully considered but they are not persuasive.

Applicants argue that the specification describes EIAV-based lentiviral vectors are ideally suited for gene therapy for eye disease and Example 4 describes the construction of EIAV-based lentiviral vector expressing various angiostatic genes. Applicants further cite references Balaggan et al., 2006 and Balaggan et al., 2005 and argue that delivery of EIAV-based lentiviral vector carrying endostatin or angiostatin

results in significant inhibition of both angiogenesis and vascular hyperpermeability (amendment, p. 4-5). This is not found persuasive because of the reasons set forth in the preceding official action mailed 6-27-06. Example 4 only describes prophetic construction of EIAV vectors expressing endostatin and/or angiostatin via either a CMV or HRE promoter, and the use of said vector for in vivo study of age-related macular degeneration. The claims encompass treating ocular neovascularization by delivering an EIAV-based lentiviral vector expressing varous angiostatic gene product under any promoter to the target cells in the eye of a subject via direct injection to target cells. The specification fails to provide adequate guidance and evidence for how to administer an EIAV-based lentiviral vector expressing any angiostatic gene product under any promoter to the target cells in the eye of a subject via direct injection such that sufficient angiostatic gene product can be obtained at the target cells in the eye so as to provide therapeutic effect in vivo for treating ocular neovascularization, e.g. retinal or choroidal neovascularization. The specification fails to provide any evidence of what kind of symptom of retinal or choroidal neovascularization has been ameliorated by the treatment. The claims also do not specify what kind of symptom of retinal or choroidal neovascularization has been ameliorated by the treatment. The art of gene therapy in vivo was unpredictable at the time of the invention. Whether sufficient gene product could be obtained at the target cells in the eye so as to provide therapeutic effect in vivo for treating retinal or choroidal neovascularization was unpredictable at the time of the invention. Further, the biological function of a protein was unpredictable from mere amino acid sequence at the time of the invention. Examiner cannot fine the cited references Balaggan et al., 2006 and Balaggan et al., 2005, therefore, the cited references

are not considered by examiner. Even if there is evidence for the therapeutic effect in treating retinal or choroidal neovascularization in the cited references, the method is only enabled for the particular vector and the administration routes used in the cited references. Thus, claims 1-6, 12-18 remain rejected and the newly added claims 47, 48 and 50-54 are rejected under 35 U.S.C. 112 first paragraph.

Conclusion

No claim is allowed.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shin-Lin Chen whose telephone number is (571) 272-0726. The examiner can normally be reached on Monday to Friday from 9:30 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Paras can be reached on (571) 272-4517. The fax phone number for this group is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Shin-Lin Chen, Ph.D.

SHIN-LIN CHEN
PRIMARY EXAMINER